

IN THE CLAIMS

What is claimed:

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1. For a wheeled vehicle adapted to transport commodities, an inspection and requalification method comprising:

determining a type of vehicle under inspection;

selecting from an instruction set an exhaustive list of sites to be inspected for the identified type of vehicle;

inspecting each of the listed sites in accord with the instructions set forth for each of the listed sites in the instruction set; and

recording data derived from implementation of the inspections conducted at each of said exhaustive list of sites.

2. For a wheeled vehicle adapted to transport commodities, an inspection and requalification method in accord with claim 1, wherein the type of vehicle comprises any one of a regulated tank car and a non-regulated tank car.

3. For a wheeled vehicle adapted to transport commodities, an inspection and requalification method in accord with claim 2, wherein the exhaustive list of sites comprise a plurality of inspection sites covered by 49 C.F.R. §180.509, SSIP, and Rule 88.B.2.

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4. For a wheeled vehicle adapted to transport commodities, an inspection and requalification method in accord with claim 3, wherein the inspecting step includes a visual inspection of the tank shell interior and exterior; piping, valves, fittings and gaskets; brake rigging, safety appliances, draft system, valves and fittings; closures and protective housings on the tank car; and all required markings on the tank car.

5. For a wheeled vehicle adapted to transport commodities, an inspection and requalification method in accord with claim 4, wherein the inspecting step includes an enhanced visual inspection of all fillet welds greater than 1/4" within 4 feet of a bottom longitudinal centerline of the tank car.

6. For a wheeled vehicle adapted to transport commodities, an inspection and requalification method in accord with claim 4, wherein the inspecting step includes:  
determining whether the tank car has interior heater coils, and  
performing a hydrostatic coil test on interior heater coils.

7. For a wheeled vehicle adapted to transport commodities, an inspection and requalification method in accord with claim 6, wherein the inspecting step includes ultrasonic flaw detection on all circumferential butt welds of the tank shell at least within two feet of a bottom longitudinal centerline of the tank car.

8. For a wheeled vehicle adapted to transport commodities, an inspection and requalification method in accord with claim 7, wherein the inspecting step includes ultrasonic thickness examination of at least one of the tank shell, heads, sumps, manways, and nozzles for each of at least one compartment.

9. For a wheeled vehicle adapted to transport commodities, an inspection and requalification method in accord with claim 8, wherein the inspecting step includes visual inspection of at least one of the thermal protection systems, tank head puncture resistance systems, coupler vertical restraint systems, and systems used to protect discontinuities to ensure integrity.

10. For a wheeled vehicle adapted to transport commodities, an inspection and requalification method in accord with claim 9, wherein the inspecting step includes:

removing the pressure relief device from the tank car and visually inspecting for damage,

and,

includes testing the pressure relief device with air to ensure conformance with start-to-discharge pressure requirements.

11. For a wheeled vehicle adapted to transport commodities, an inspection and requalification method in accord with claim 10, wherein the inspecting step includes:

determining whether the tank car has a lining for the protection of the tank shell, and

inspecting the lining.

12. For a wheeled vehicle adapted to transport commodities, an inspection and requalification method in accord with claim 11, wherein the inspecting step includes performing a leakage pressure test on at least one compartment of a tank and all fittings and openings corresponding to said at least one compartment.

13. For a wheeled vehicle adapted to transport commodities, an inspection and requalification method in accord with claim 5, wherein said inspecting step comprises performing a visual structural integrity inspection of at least the following sites as applicable to an inspected tank car:

- at least one pad-to-tank weld,
- at least one sill-to-pad weld,
- at least one bolster-to-bolster pad weld,
- at least one BOV saddle weld,
- at least one sump weld,

at least one BOV skid weld,  
at least one attachment weld; and  
at least one draft pocket weld.

14. For a wheeled vehicle adapted to transport commodities, an inspection and requalification method in accord with claim 13, wherein said inspecting step comprises inspecting said at least one draft pocket weld by:

inspecting front and rear draft stops and gusset welds for both jacketed and non-jacketed tank cars;

inspecting, for non-jacketed cars with sill reinforcement pads, at least one of longitudinal sill to reinforcement pad welds between draft lugs, transverse sill to reinforcement pad welds, longitudinal sill to reinforcement pad slot welds, and longitudinal sill to reinforcement pad welds above rear draft lug assemblies;

inspecting, for jacketed cars with sill reinforcement pads, at least one of longitudinal to draft sill/reinforcement pad welds outside of a sill along a full length of a body bolster attachment, transverse draft sill/reinforcement pad outboard welds, longitudinal reinforcement pad to tank sill welds along a full length of the body bolster attachment, and transverse reinforcement pad to tank shell head welds;

inspecting, for non-jacketed cars without sill reinforcement pads, at least one of a top center 'CZ' angle butt weld, longitudinal draft sill to tank shell welds between draft lugs, inside transverse draft sill to tank shell welds, longitudinal draft sill to tank shell slot welds, transverse draft sill to tank shell slot welds, and longitudinal draft sill to tank shell welds from rear lugs inboard toward center fillers, and

inspecting, for jacketed cars without sill reinforcement pads, at least one of longitudinal draft sill to tank shell welds along a full length back to body bolster attachments and transverse draft sill to tank shell welds.

15. For a wheeled vehicle adapted to transport commodities, an inspection and requalification method in accord with claim 14, wherein for a jacketed tank car having a fiberglass or fiber frax insulation system, said inspecting step further comprises:

creating a plurality of cutout areas in the tank car jacket in areas corresponding to welds to be inspected,

removing all insulation material from the cutout areas,

pushing the insulation away from the entire area of the welds to be inspected, and

inspecting welds using a flexible boroscope.

16. For a wheeled vehicle adapted to transport commodities, an inspection and requalification method in accord with claim 15, wherein for a jacketed tank car having a fiberglass or fiber frax insulation system, said inspecting step further comprises:

recording weld defects,

repairing weld defects,

replacing removed insulation with new insulation comprising at least one of fiber frax and fiberglass, and

welding a patch over areas of the jacket which were removed in said creating step.

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17. An inspection and requalification procedure for a wheeled vehicle adapted to transport commodities, comprising: compiling (a) a list of vehicle types, (b) an exhaustive list of sites to be inspected, for each type and structure of the vehicle, and (c) a list of inspection procedures for each of the listed sites; and producing therefrom a report list for recording data derived from implementation of the tests conducted at each of said exhaustive list of sites.

18. An inspection and requalification procedure for a wheeled vehicle adapted to transport commodities in accord with claim 17, wherein the type of vehicle comprises any one of a regulated tank car and a non-regulated tank car.

19. An inspection and requalification procedure for a wheeled vehicle adapted to transport commodities, in accord with claim 18, wherein the exhaustive list of sites comprise a plurality of inspection sites covered by 49 C.F.R. § 180.509, SSIP, and Rule 88.B.2.

20. An inspection and requalification procedure for a wheeled vehicle adapted to transport commodities, in accord with claim 19, wherein the exhaustive list of sites comprises:

- at least one pad-to-tank weld,
- at least one sill-to-pad weld,
- at least one bolster-to-bolsterpad weld,
- at least one BOV saddle weld,
- at least one sump weld,
- at least one BOV skid weld,
- at least one attachment weld; and
- at least one draft pocket weld.